# MIRACH 100/5: PROGRAMS UPDATE AND TACTICAL VARIANTS

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# MIRACH 100/5: THE NATURAL SYSTEM EVOLUTION

NA.M.F.I.

Mirach 100/4 RAM config.

Mirach 100/5

Mirach 100/2

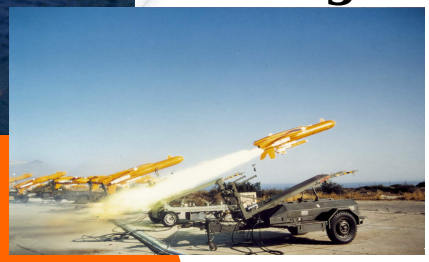
1978

1988

1996

1998

Tactical Firings



Mirach 70

1973

CT 20

AQM 34

1955

P1

2005

NIBBIO: Mirach 100/5 Tactical Variant

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# MIRACH 100/5: HIGH PERFORMANCE MULTI-PURPOSE TGT DRONE

✓ Designed to satisfy stringent Italian Joint Forces Requirement

✓ Certified in 1998, incorporates state of the art technology and all operational experience from everyday Ranges activity

**PERFORMANCES:**

- Endurance 90 min
- Max Speed 0.85 Mach
- Min Altitude 3 m
- Ceiling 12500 m
- Instantaneous Load Factor 8 g
- Sustained Load Factor 6 g

**PAYLOADS:**

- Active RCS augmenters
- Passive RCS augmenter
- IR augmenters
- IR and Chaff dispenser (IRCM/A and IRCM/M)
- Towed Body System
- Air Launched Aerial Targets (LOCUSTA)
- Missile Seeker Head simulators
- Miss Distance Indicator
- Vector Scoring System

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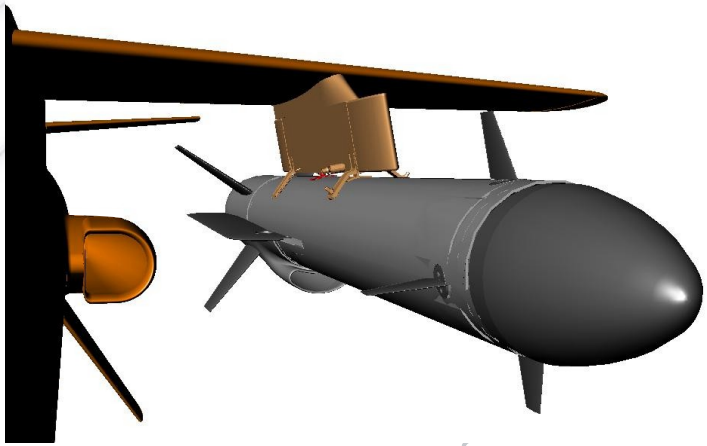
# MIRACH 100/5: TOW TARGETs AND SECONDARY TGTs

✓**Tow Targets:**

- Low cost IR TT
- Radar active TT
- Multirole TT (recoverable)

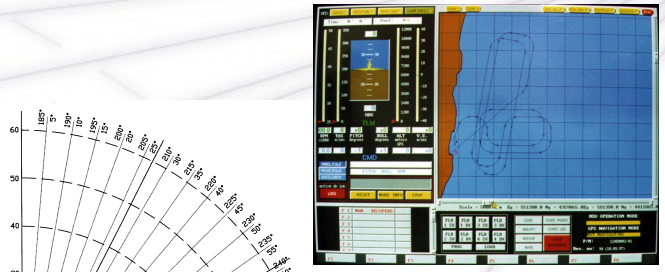
✓**Secondary Target (Locusta):**

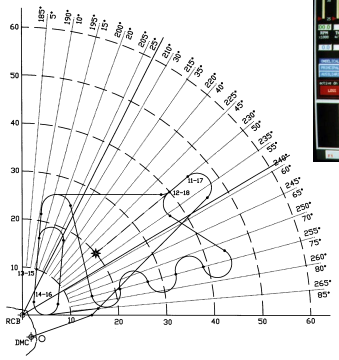
- Low cost, expendable
- Autonomous flight
- Speed comparable to Mirach
- Radar active payload
- Luneberg lens



# MIRACH 100/5: FITS INTO COMPLEX MISSION PLANNING

- Proven Endurance for Tactical Scenarios
- Navigational Accuracy
- Long Range Operations
- Pre-Programmable mission profile
- Rapid adaptation of System to mission planning changes





- Flight Formation Flight Capability
- Tactical Firings (e.g. 5 M irach 100/5

  serving Patriot, Hawk & Roland Systems at NAMFI range)
- **High-G Manoeuvres** (*waving* and *escape profiles*)

**CERTIFIED MISSION RELIABILITY**

**100 %**

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# CURRENT MAJOR PROGRAMMES

| | |
|---|---|
| **UK ROYAL NAVY** | **RAST (Replacement Aerial Subsonic Target)** |
| **UK MOD (QinetiQ)** | **RATS (Replacement Aerial Target System)** |
| **ITALIAN MOD** | **INTERFORCES AERIAL TARGET SISTEM FOR PISQ RANGE** |
| **CEDEA Range, (Spain)** | **Replacement of previous series Mirach 100/4 German Navy RAM firings** |
| **FRANCE DGA** | **CIBLE FUTURE POUR LES CENTRES D'ESSAIS CEL ET CEM** |
| **IRIS-T CONSORTIUM** | **Delivery of configured targets for the IRIS-T Test & Evaluation Programme** |
| **NAMFI NATO RANGE, (Crete)** | **T MISSIONS FOR NATO RANGE** |

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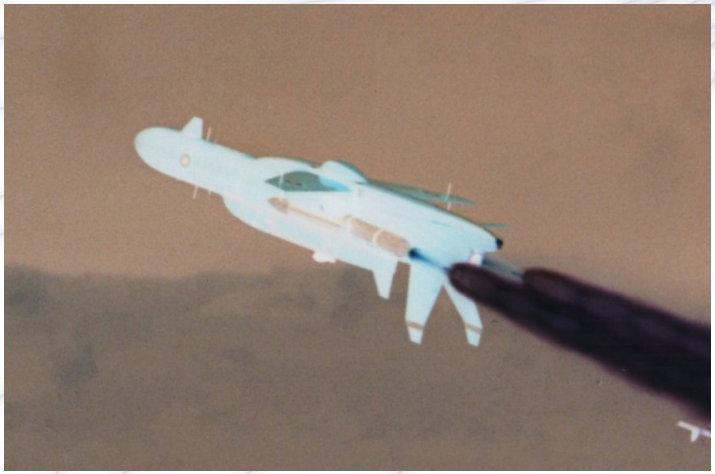
# FROM MIRACH 100/5 TO NIBBIO TACTICAL UAV

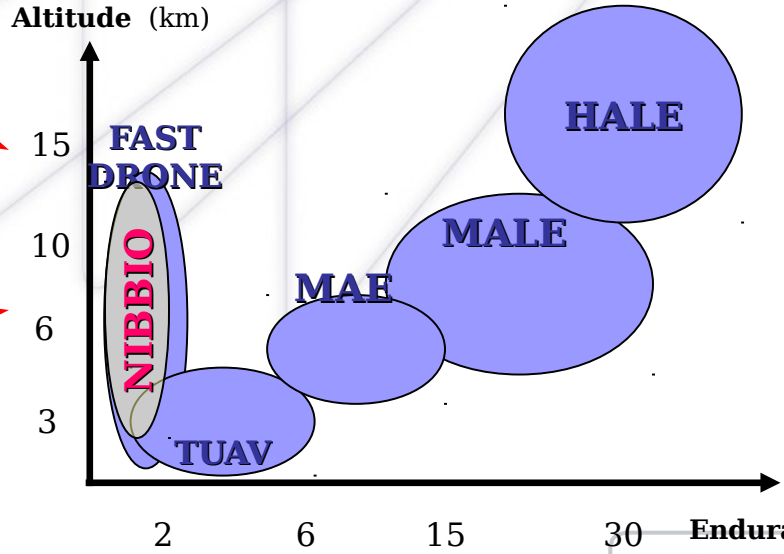
**Meteor/Galileo Avionica multi-decennial experience in UAVs**

**the Mirach 100/5:**

**a reliable, high performance aerial platform**

**Payloads and operational need**



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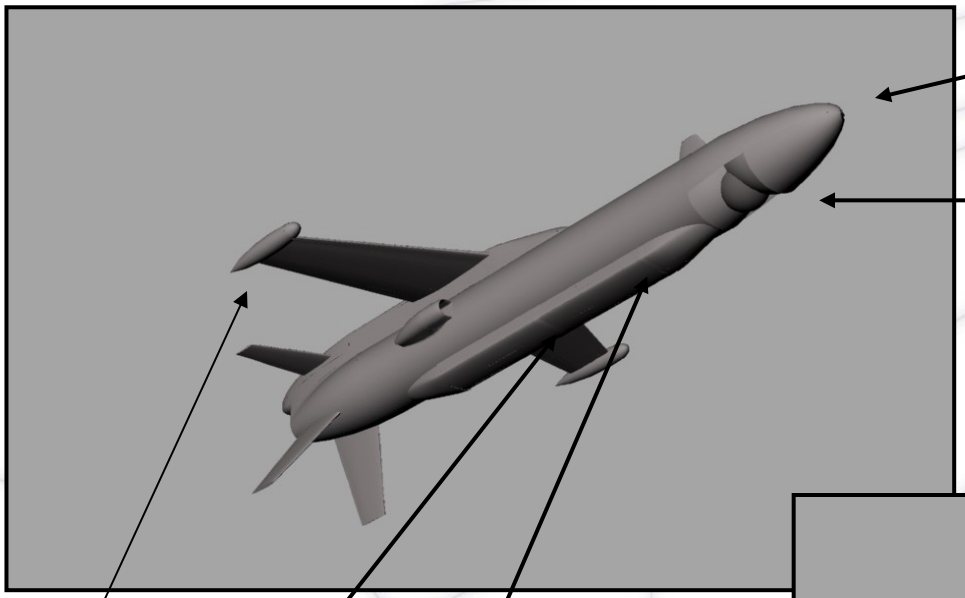
# NIBBIO'S MISSIONS

- Multi-spectral reconnaissance on previously located targets
- Pre-strike and Post-strike (BDA) reconnaissance
- Electronic Intelligence (ELINT) - Comm. and Radar -
- Active/Passive air or ground launched Decoy

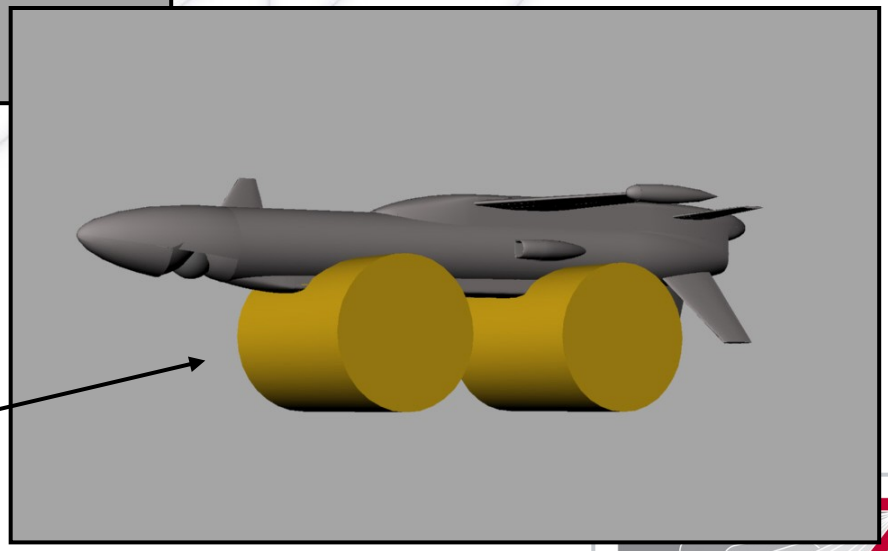
# TYPICAL EO/IR-ESM RECCE CONFIGURATION



ESM antenna

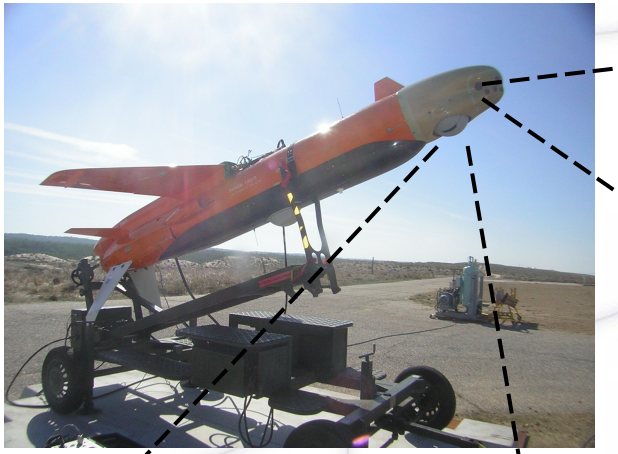
EO/IR Payload

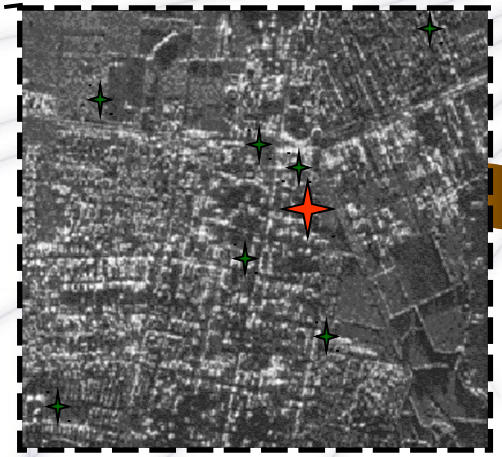
ESM antennae



Recovery air-bags

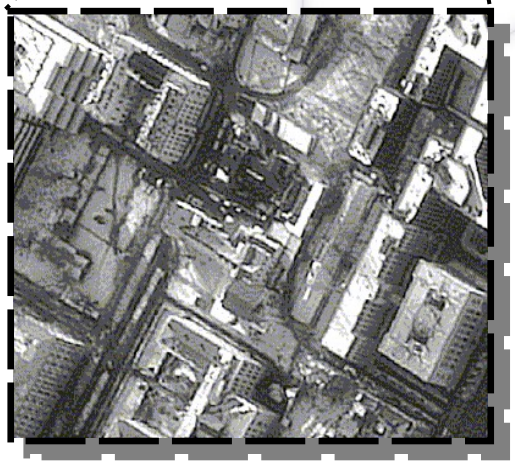
# EXAMPLE OF CONCEPT OF OPERATION





C4ISR

ELINT



IMINT

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# NIBBIO: SURVIVABILITY ISSUES

A NIBBIO-type fast UAV is able to delay or nullify detect
thanks to its inherent features such as:

- reduced RCS
- reduced IR signature
- low altitude profiles at high-subsonic spe
- radio-silence
- agility

studies are under way to improve its survivability during
“hot runs” in proximity of the assigned targets.

# NIBBIO: AIR-LAUNCHED VARIANTS

Mirach 100/2 carried by a FMA-Pucarà

**Two Mirach 100/2 carried by Agusta A109**

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# QUESTIONS?

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